MER Shift Reports

STS-107

Day 16 Shift 1

STS-107 ESD SYSTEMS SHIFT REPORT
DAY 16 SHIFT 1
GMT 031/17:00

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

FC/PRSD – The second FCMS data take scheduled for 14/14:25 MET was unsuccessful. The crew verified the backup data cable, S/N 1004, was used. No farther troubleshooting was performed because all or the fuel cells have nominal signatures and conflicts with payload activity. No more attempts or troubleshooting are scheduled this flight.

The ninth on-orbit fuel cell purge was performed at 030:21:46 GMT (14/06:07 MET). During the 37-hour purge interval the approximate performance decay was 0.10 Vdc in fuel cell 1, 0.18 Vdc in fuel cell 2, and 0.17 Vdc in fuel cell 3.

Oxygen tanks 8 and 9 are nearing depletion to residual quantities.

APU - APU 1 was run for FCS C/O; all parameters were nominal during the checkout run. APU 1 run time and fuel consumption are given below:

	START TIME (GMT)	STOP TIME (GMT)	RUN TIME (min:sec)	FUEL USED (LBS)
APU 1 (S/N 407)	031:10:41:19	031:10:46:46	05:27	16

The GGVM performance and GG Pc signatures were nominal. APU 1 start was nominal, with no indications of bubbles. There was no gearbox re-pressurization.

HYD/WSB – Hydraulic and WSB performance on system 1 was nominal. Due to the short run time of APU 1 (~ 5 min 27 sec), APU lube oil spray cooling was not required. The maximum lube oil return temperature post APU shutdown was ~ 193 F. The system 1 bootstrap accumulator reseat pressure was 2784 psia.

During FCS checkout, all three "B" vent heaters performed nominally. WSB Steam Vent temperatures rose above 122 F (off-scale low limit) at ~ 031/08:33 GMT, approximately 2 hour, 08 minutes before APU start. Nominal vent heater cycling was observed on all three systems.

EPDC – The only problem being worked by EPDC is the intermittent "sluggish" AC2 phase B current response. The plots for the last 24 hours indicate that there were multiple, intermittent occurrences of sluggish response on AC2 by phase B. All monitored voltage and current measurements were nominal. The 24 hour plots and the strip chart recorder data was reviewed with no unusual signatures noted.

OMS/RCS – Left OMS GN2 Accumulator pressure is holding. RCS hotfire was performed without incident. Hotfire began at 031/11:48:11.8 GMT and ended at 031/11:56:06 GMT. All RCS jets were fired at least once for at least 0.240 seconds on each pulse. All thrusters have now been fired. The crew inadvertently did not twice perform the first sequence of pulses, as a result the first group of jets (F1F, F2F, F1U, L1A, L1U, L1L, R1A, R1U, R1R) were pulsed only one time.
Manifold 5 circuit breaker test was performed at 031/11:59 GMT. No anomalies occurred.

Left OMS Interconnect was established at 031/12:06 GMT.
Left OMS Interconnect was terminated and Right OMS interconnect established at 031/12:50 GMT. The interconnect usage on the LOMS was 4.984 % at termination and at the present time is 4.444 % on the ROMS.

OMS and RCS system data has been reviewed up through 031/13:00 GMT. System performance continues as expected with no anomalies noted.
All vernier jet firings through 031/08:39:00.000 GMT have been reviewed. There have been no anomalous pulses.

RCS PRESSURIZATION LEG FRCS: B LRCS: B RRCS: B

AFT RCS INTERCONNECT CONFIGURATION: Left OMS Interconnect.

38 of 38 primary thrusters have been fired without incident. 15 new primary thrusters have been fired since the previous report:

F1F	X	L1A	X	R1A	X
F2F	X	L3A	X	R3A	X
F3F	X	L1L	X	R1R	X
F1L	X	L2L	X	R2R	X
F3L	X	L3L	X	R3R	X
F2R	X	L4L	X	R4R	X
F4R	X	L1U	X	R1U	X
F1D	X	L2U	X	R2U	X
F2D	X	L4U	X	R4U	X
F3D	X	L2D	X	R2D	X
F4D	X	L3D	X	R3D	X
F1U	X	L4D	X	R4D	X
F2U	X				
F3U	X				

Walter Scott
ESD Team Lead

STS-107 MER TCS Thermal 1st Shift Report

January 31, 2003 11:00AM, 031/17:00 GMT (15/01:21 MET)

All thermal systems are performing nominally and all subsystem temperatures are within acceptable limits.

Than Nguyen/Steve Tidwell

MER FLIGHT CREW EQUIPMENT- GFE/CFE
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD16; 2nd SHIFT REPORT

GMT: 031:17:00

EVENTS:
Crew is finishing up some experiments and conducting comm. checks. Cabin stow activities have begun.

FORWARD ACTIONS:
Continuing to monitor CHIT database.

CHITS (Monitoring / Working / Waiting for Closure):
There are currently no OPEN Chits with direct/indirect effect on IVA FCE hardware

HARDWARE STATUS:
There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.

Maurice J. Lehmann
Flight Crew Equipment- GFE/CFE

HYD/WSB
STS-107 FCS C/O Shift Report
5:00 AM
1/31/03

APU 1 was selected for FCS C/O. Hydraulic and WSB performance on system 1 was nominal. Due to the short run time of APU 1 (~ 5min 27sec), APU lube oil spray cooling was not required. The maximum lube oil return temperature post APU shutdown was ~ 193°F. The System 1 bootstrap accumulator reseat pressure was 2784 psia.

During FCS checkout, all three "B" vent heaters performed nominally. WSB Steam Vent temperatures rose above 122° F (off-scale low limit) at ~ 031/08:33 GMT, approximately 2 hour, 08 minutes prior to APU start. Nominal vent heater cycling was observed on all three systems.

The current status of the mission circ pump runs is as follows, with no additional circ pump runs anticipated:

	Thermal	**Accumulator Recharges**
System 1 = 1 (for Elevon Park)		0
System 2 = 0 runs		0
System 3 = 0 runs		0

Total Circ Pump Runs = 1

At this time the HYD/WSB group is not working any issues.

Jeffery S. Goza HYD/WSB SSE –Boeing Houston OPS
David D. Beaugh HYD/WSB SSE –Boeing Houston OPS

STS-107
OMS/RCS Day 16 Shift 1 Report

INITIATOR: Eguia, Arrieta, Jones
DATE: January 31, 2003

MET: 14/23:25
GMT: 031/15:05
CENTRAL TIME: 09:05 AM CST

	Left		Right		Forward	
	Oxidizer	Fuel	Oxidizer	Fuel	Oxidizer	Fuel
PFS %	58.4	58.6	57.4	56.8	42.4	39.0
Interconnect Usage	4.984		4.245			

ORBIT

1. **Left OMS GN2 Accumulator pressure is holding.**
2. **RCS hotfire was performed without incident.** Hotfire began at 031/11:48:11.8 GMT and ended at 031/11:56:06 GMT. All RCS jets were fired at least once for at least 0.240 seconds on each pulse. All thrusters have now been fired. The crew inadvertently did not twice perform the first sequence of pulses, as a result the first group of jets (F1F, F2F, F1U, L1A, L1U, L1L, R1A, R1U, R1R) were pulsed only one time.
3. **Manifold 5 circuit breaker test was performed at 031/11:59 GMT.** No anomalies occurred.
4. **Left OMS Interconnect was established** at 031/12:06 GMT.
5. **Left OMS Interconnect was terminated** and Right OMS interconnect established at 031/12:50 GMT.

Data Review

1. OMS and RCS system data has been reviewed up through 031/13:00 GMT. System performance continues as expected with no anomalies noted.
2. All vernier jet firings through 031/08:39:00.000 GMT have been reviewed. There have been no anomalous pulses.

RCS PRESSURIZATION LEG **FRCS: B** **LRCS: B** **RRCS: B**

AFT RCS INTERCONNECT CONFIGURATION: Left OMS Interconnect.

38 of 38 primary thrusters have been fired without incident. 15 new primary thrusters have been fired since the previous report:

F1F	**X**	L1A	X	R1A	X
F2F	**X**	L3A	X	R3A	X
F3F	**X**	L1L	**X**	R1R	**X**
F1L	**X**	L2L	**X**	R2R	**X**
F3L	X	L3L	X	R3R	X
F2R	**X**	L4L	**X**	R4R	**X**
F4R	X	L1U	X	R1U	X
F1D	X	L2U	**X**	R2U	**X**
F2D	X	L4U	**X**	R4U	**X**
F3D	X	L2D	X	R2D	X
F4D	X	L3D	X	R3D	X
F1U	X	L4D	X	R4D	X
F2U	X				
F3U	X				

AVIONICS
FLIGHT CONTROL / GNC DAILY REPORT

01/31/03

STS-107
Daily Report
Flight Day 16

OPS 8 checkout was completed successfully. No flight control anomalies were noted.

The MAGR failed to receive the daily security key this morning. The condition is documented in FSW DR (and related Ops Note) 110645.

Flight controls and GNC systems are performing nominally.

Robert Winkler
1-31-03

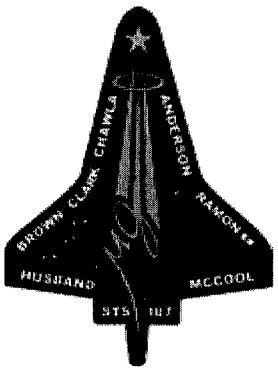
STS-107
MER Comm and Track Shift Report
GMT 031:13:00
Shift 1

All comm and track systems are operating nominally.

Landing -1 day comm checks scheduled MET 14/22:20 - 15/00:00 (MIL and DFR).
Ku-Band stow scheduled for ~8:00 pm CST (MET 15/10:00).

Martha May

MER Comm & Track



DPS PASS FSW, MEDS & H/W MER Shift Report

STS-107 **Date: 1/31/2003** **GMT: 031/17:00:00**
Shift: 1st

SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

DPS Team Lead: Ken Wood **Signature:** Ken Wood

MER Shift Reports

STS-107

Day 16 Shift 2

STS-107 ESD SYSTEMS SHIFT REPORT
DAY 16 SHIFT 2
GMT 032/00:00

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

EPDC - The only problem being worked by EPDC is the intermittent "sluggish" AC2 phase B current response. The plots for the last 24 hours indicate that there was one additional occurrence of sluggish response on AC2 by phase B.

All monitored voltage and current measurements were nominal. The 24 hour plots and the strip chart recorder data was reviewed with no unusual signatures noted.

Tom Davies
ESD Team Lead

ORBITER ECLSS

STS-107 ECLSS SHIFT REPORT

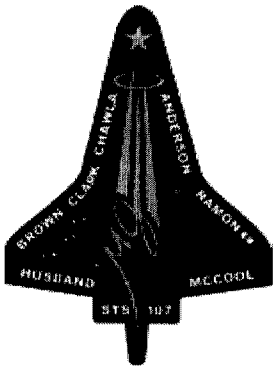
FLIGHT DAY 17

SHIFT 2

All ECLSS systems performing nominally.
The supply water dump through the FES that was initiated at MET 15/00:29 was terminated at MET 15/04:31.

Consumables:	Supply water	611.4	lb.
	Waste water	69.9	lb.
	Orbiter Nitrogen	130.9	lb.

Shift Lead
GMT 032/01:00



United Space Alliance

DPS PASS FSW, MEDS & H/W MER Shift Report

STS-107 **Date: 1/31/2003** **GMT: 032/01:00:00**
Shift: 2nd

SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

DPS Team Lead: Chris Thames **Signature:** Paul C Thames

MER FLIGHT CREW EQUIPMENT- GFE/CFE
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD16; 3rd SHIFT REPORT

GMT: 032:01:00

EVENTS:
BLUE TEAM shift awake.
Crew is continuing pre-landing operations.
No IFM procedures are planned. Landing opportunities look optimal for tomorrow's attempts.

FORWARD ACTIONS:
Monitoring CHIT database for activity.
Monitoring loops for any FCE-related issues.

CHITS (Monitoring / Working / Waiting for Closure):
There are currently no OPEN Chits with direct/indirect effect on IVA FCE hardware

HARDWARE STATUS:
There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.

Generoso (Bum) C. Jacinto III
Flight Crew Equipment- GFE/CFE

STS-107 MER Thermal 2nd Shift Report

032/01:00 GMT, 19:00 CST 01/31/2003

All thermal systems are performing nominally and all temperatures are within acceptable limits.

The pointers 4 extension day ATL was evaluated and is thermally acceptable.

Dave Russell

Dave Russell

MER Shuttle Safety Console
STS-107 FD 16 Shift 2
GMT 032:01:00

The MER Safety Console is not working any safety of flight issues.

Jim Gardner

MER Shift Reports

STS-107

Day 16 Shift 3

Thermal 3rd Shift Report

STS-107, February 1, 2003
3 AM, MET 015/17:21 (32/09:00 GMT)

All temperatures are within acceptable limits and all thermal systems are operating nominally.

_____
Tim Davies

STS-107 ESD SYSTEMS SHIFT REPORT
DAY 16 SHIFT 3
GMT 032/09:00

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

Chuck Beatty
ESD Team Lead

ORBITER ECLSS

STS-107 ECLSS SHIFT REPORT

FLIGHT DAY 17

SHIFT 3

All ECLSS systems performing nominally.

Consumables:	Supply water	621.5	lb.
	Waste water	89.2	lb.
	Orbiter Nitrogen	125.1	lb.

Shift Lead
GMT 032/09:00

MER FLIGHT CREW EQUIPMENT- GFE/CFE
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD17; 1st SHIFT REPORT

GMT: 032:09:00

EVENTS:
Red Team is awake
Activities continue in preparation for landing

FORWARD ACTIONS:
Monitoring CHIT database for activity.
Monitoring loops for any FCE-related issues.

CHITS (Monitoring / Working / Waiting for Closure):
There are currently no OPEN Chits with direct/indirect effect on IVA FCE hardware

HARDWARE STATUS:
There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.

Gerard Szymczak
Flight Crew Equipment- GFE/CFE

MER Shuttle Safety Console
STS-107 FD 15 Shift 3
GMT 032:08:53

The MER Safety Console is not working any safety of flight issues.

David Melendez